

## Measuring nitrogen oxide content in exhaust gas

**Enginesens Motorsensor developed in co-operation with Kleinknecht Automotive (both Germany) a transmitter for well-known nitrogen oxide sensors. These probes have a communication interface working with a Classical CAN network.**

*The transmitter works with  
Classical CAN (Photo:  
Enginesens)*

Nitrogen sensors are generally sensitive to vapor and condensates. Immediately after starting the engine, the risk of water hammer is extremely high. The ceramic sensor tip is heated to 800 °C operating temperature. If this is hit by a water droplet, it cracks immediately. For this reason the probe heats the tip to 80 °C after activation. The transmitter will now wait 5 minutes for the motor to run normally and then send a

dewpoint end signal to the probe. This heats up in several stages to the operating temperature and starts measuring the nitrogen oxide content in the exhaust gas.

A Classical CAN signal can be transmitted over distances of up to 15 m. In many cases this is not sufficient for combined heat and power plants, stationary engines, marine propulsion systems, etc. Therefore, the transmitter converts the measured pulse-position modulation (ppm) signal into a 4 mA to 20 mA signal, which is independent from the cable length. This current signal can be processed by any PLC.

This means that existing systems can be retrofitted with selective catalytic reduction systems. The complete system consisting of a 24-V nitric oxide probe with a measuring range of 0 ppm to - 1500 ppm, a cable connection between probe and transmitter and the transmitter itself will be available at Enginesens in October 2018. The transmitter is suitable for DIN rail mounting and indicates the respective operating status via status LED. The company is part of the Sensor + Text 2018 exhibition in Nuremberg, Germany.

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